

AMENDMENTS TO THE CLAIMS

1-18. (Canceled)

19. (Currently Amended) A lubricant applying apparatus for applying lubricant to a rolling bearing, comprising:

a table disposing said rolling bearing thereon;

a lubricant discharge nozzle having at least one discharge port, said lubricant discharge nozzle discharging a prescribed amount of said lubricant in a state that said lubricant discharging port is located above a rolling element of the said rolling bearing; and

an application control unit, ~~relatively approaching~~ that moves at least one of said lubricant discharge nozzle to and said rolling element with respect to one another, and ~~providing that provides~~ a discharge command to said lubricant discharge nozzle; and

a sensor detecting a position of said rolling element during the rotation of said rolling bearing,

wherein said table is a rotating table rotating said rolling bearing about a center axis thereof as a rotation axis, and

wherein said application control unit receives a signal representing that said sensor detects the position of said rolling element, and moves at least one of said lubricant discharge nozzle and said rolling element with respect to one another after stopping the rotation of said rotating table.

20. (Currently Amended): A lubricant applying apparatus according to claim [[19]] 36, further comprising:

a sensor detecting a position of said rolling element during the rotation of said rolling bearing,

wherein said table is a rotating table rotating said rolling bearing about a center axis thereof as a rotation axis; and

said application control unit receives a signal representing that said sensor detects the position of said rolling element, and ~~relatively approaches~~ moves at least one of said lubricant discharge nozzle ~~to~~ and said rolling element with respect to one another after stopping the rotation of said rotating table.

21. (Previously Presented): A lubricant applying apparatus according to claim 19, wherein said discharge port of said lubricant discharge nozzle has been treated with an oil repellent treatment.

22. (Previously Presented): A lubricant applying apparatus according to claim 19, wherein said lubricant discharge nozzle includes said discharge ports, the number of which is equal to that of said rolling elements of said rolling bearing.

23. (Previously Presented): A lubricant applying apparatus according to claim 19, further comprising:

a lubricant pressurized sending pump sending said lubricant under pressure via a filter filtering said lubricant.

24. (Previously Presented): A lubricant applying apparatus according to claim 19, wherein said application control unit has a controller and a rolling element detection signal is inputted in said controller.

25. (Previously Presented): A lubricant applying apparatus according to claim 24, wherein said controller further has a first amplifier, an electromagnetic valve and a second amplifier;

a rotation control signal, an electromagnetic valve control signal, and a vertical slide control signal for a prescribed liquid volume discharge device are outputted from said controller; and

said rotation control signal is inputted in said first amplifier, said electromagnetic valve control signal is inputted in said electromagnetic valve, and a vertical slide control signal for a prescribed liquid volume discharge device is inputted in said second amplifier.

26. (Previously Presented): A lubricant applying apparatus according to claim 25, further comprising:

a rotational driving motor for rotationally driving said rotating table;

a plunger driving pneumatic cylinder for driving a pump; and

a vertical driving motor for sliding said prescribed liquid volume discharge device vertically,

wherein a first driving voltage signal outputted from said first amplifier is inputted in said rotational driving motor;

air from said electromagnetic valve is supplied to said plunger driving pneumatic cylinder; and

a second driving voltage signal outputted from said second amplifier is inputted in the vertical driving motor.

27. (Currently Amended): A lubricant applying apparatus for applying lubricant to a rolling bearing, comprising:

a table disposing said rolling bearing thereon, and having an engagement portion for engaging a convex or concave portion of a retainer of said rolling bearing;

a lubricant discharge nozzle having at least one discharge port, said lubricant discharge nozzle discharging a prescribed amount of said lubricant in a state that said lubricant discharge port is located above a rolling element of said rolling bearing; and

an application control unit, ~~relatively approaching~~ that moves at least one of said lubricant discharge nozzle to and said rolling element with respect to each other, and providing that provides a discharge command to said lubricant discharge nozzle; and

a sensor detecting a position of said rolling element during the rotation of said rolling bearing,

wherein said table is a rotating table rotating said rolling bearing about a center axis thereof as a rotation axis, and

wherein said application control unit receives a signal representing that said sensor detects the position of said rolling element, and moves at least one of said lubricant discharge nozzle and said rolling element with respect to one another after stopping the rotation of said rotating table.

28. (Previously Presented): A lubricant applying apparatus according to claim 27, wherein the table has a convex engagement portion for engaging a concave engagement portion formed in a lower face of the retainer.

29. (Canceled)

30. (Previously Presented): A lubricant applying apparatus according to claim 27, wherein said discharge port of said lubricant discharge nozzle has been treated with an oil repellent treatment.

31. (Previously Presented): A lubricant applying apparatus according to claim 27, wherein said lubricant discharge nozzle includes said discharge ports, the number of which is equal to that of said rolling elements of said rolling bearing.

32. (Previously Presented): A lubricant applying apparatus according to claim 27, further comprising:
a lubricant pressurized sending pump sending said lubricant under pressure via a filter filtering said lubricant.

33. (Currently Amended): A lubricant applying apparatus according to claim ~~29~~ 27, wherein said application control unit has a controller and a rolling element detection signal is inputted in said controller.

34. (Previously Presented): A lubricant applying apparatus according to claim 33, wherein said controller further has a first amplifier, and electromagnetic valve and a second amplifier;
a rotation control signal, an electromagnetic valve control signal, and a vertical slide control signal for a prescribed liquid volume discharge device are outputted from said controller; and
said rotation control signal is inputted in said first amplifier, said electromagnetic valve control signal is inputted in said electromagnetic valve, and a vertical slide control signal for a prescribed liquid volume discharge device is inputted in said second amplifier.

35. (Previously Presented): A lubricant applying apparatus according to claim 34, further comprising:

a rotational driving motor for rotationally driving said rotating table;

a plunger driving pneumatic cylinder for driving a pump; and

a vertical driving motor for sliding said prescribed liquid volume discharge device vertically,

wherein a first driving voltage signal outputted from said first amplifier is inputted in said rotational driving motor;

air from said electromagnetic valve is supplied to said plunger driving pneumatic cylinder; and

a second driving voltage signal outputted from said second amplifier is inputted in the vertical driving motor.

36. (New) A lubricant applying apparatus for applying lubricant to a rolling bearing, comprising:

a table disposing said rolling bearing thereon;

a lubricant discharge nozzle having at least one discharge port, said lubricant discharge nozzle discharging a prescribed amount of said lubricant in a state that said lubricant discharging port is located above a rolling element of the said rolling bearing;

an application control unit, that moves at least one of said lubricant discharge nozzle and said rolling element with respect to one another, and that provides a discharge command to said lubricant discharge nozzle,

wherein said application control unit has a controller and a rolling element detection signal is inputted in said controller,

wherein said controller further has a first amplifier, an electromagnetic valve and a second amplifier,

wherein a rotation control signal, an electromagnetic valve control signal, and a vertical slide control signal for a prescribed liquid volume discharge device are outputted from said controller, and

said rotation control signal is inputted in said first amplifier, said electromagnetic valve control signal is inputted in said electromagnetic valve, and a vertical slide control signal for a prescribed liquid volume discharge device is inputted in said second amplifier.

37. (New) A lubricant applying apparatus according to claim 36, wherein said discharge port of said lubricant discharge nozzle has been treated with an oil repellent treatment.

38. (Previously Presented): A lubricant applying apparatus according to claim 36, wherein said lubricant discharge nozzle includes said discharge ports, the number of which is equal to that of said rolling elements of said rolling bearing.

39. (Previously Presented): A lubricant applying apparatus according to claim 36, further comprising:

a lubricant pressurized sending pump sending said lubricant under pressure via a filter filtering said lubricant.

40. (Previously Presented): A lubricant applying apparatus according to claim 36, further comprising:

a rotational driving motor for rotationally driving said rotating table;

a plunger driving pneumatic cylinder for driving a pump; and

a vertical driving motor for sliding said prescribed liquid volume discharge device vertically,

wherein a first driving voltage signal outputted from said first amplifier is inputted in said rotational driving motor;

air from said electromagnetic valve is supplied to said plunger driving pneumatic cylinder; and

a second driving voltage signal outputted from said second amplifier is inputted in the vertical driving motor.

AMENDMENTS TO THE DRAWINGS

Figure 15 has been labeled as --Prior Art--.

Attachment: One Replacement Drawing Sheet (14/14, including Fig. 15)